

REMARKS

Favorable reconsideration of this application, in light of the preceding amendments and following discussion, is respectfully requested.

Claims 1-16 are pending in this application. Claims 1, 2, 5, 7, 9, 10, 14 and 16 are amended. Applicants respectfully note that the amendments are not narrowing and thus, do not substantively affect the scope of the claims.

Applicants acknowledge with appreciation the Examiner's indication that the drawings filed on August 4, 2005 have been accepted by the United States Patent and Trademark Office (U.S.P.T.O.) and that the references included in the Information Disclosure Statement filed August 4, 2005 have been considered.

Priority Documents

Applicants respectfully request that the next official communication from the U.S.P.T.O. acknowledge that certified copies of the priority documents have been received and/or identify the perceived deficiency, which has resulted in point 12 of the Office Action Summary not being checked.

Amendments to the Specification

Applicants respectfully note that the specification is amended as shown in the preceding section to correct minor translation errors.

In particular, the term "planar" has been changed to "two-dimensional" to correct a translation error because of the following. Applicants respectfully note that this application is a national phase application under 35 U.S.C. § 371 of PCT International Application No. PCT/EP04/00754, which was originally filed in German. PCT Application No.

PCT/EP04/00754 includes a “flächiger” detector, which was translated into a “planar” detector. However, such a “flächiger” detector may be a planar detector, i.e., flat detector, as well as a detector shaped similar to the detector 5 shown in FIG. 1. Accordingly, a more accurate translation for a “flächiger” detector is a “two-dimensional” detector. Accordingly, paragraphs [0002], [0017] and [0024] of the specification have been amended as shown in the preceding section of this Amendment.

Applicants respectfully submit that no new matter is added by the amendments to the specification.

Claim Rejections under 35 U.S.C. § 103

Claims 1-4, 8, 10-13 and 16 stand rejected under 35 U.S.C. §103(a) as unpatentable over Hu (U.S. Patent No. 5,377,250) in view of Silver et al. (U.S. Publication No. 2003/0123614, herein Silver). Applicants respectfully traverse this rejection for the reasons detailed below.

Hu is directed towards a reconstruction method for a helical scanning computed tomography apparatus having a multi-row detector ray. In Hu, the voxel attenuation values reconstructed from the multiple rows are combined to produce an image having an improved beam profile in the translation direction. A cone beam reconstruction method of Hu, which accounts for the divergence of the rays of a fan beam of x-rays, and helical scanning is used to further improve the slice profile. The voxels may be selected so that they cluster closely about the position of the desired slice plane.¹

Claim 1 recites, *inter lia*, “reconstructing image voxels from the scanned examination object from the output data and reproducing attenuation coefficients of the respective voxel, each image voxel being reconstructed separately from projection data that include a projection

¹ Hu, Abstract.

angular range of at least 180°, and *an approximate weighting taking place for each voxel considered in order to normalize the projection data used relating to the voxel.*

With respect to the above-identified feature of independent claim 1, the Examiner asserts that column 10, lines 34-37; column 11, lines 30-32; and column 11, lines 46-48 teaches the above-identified feature of independent claim 1.² However, Applicants respectfully submit that the identified portions of Hu are all directed to the reconstruction of a slice.

One of the clearest indications that Hu is directed towards reconstructing a slice and not directed towards reconstructing each voxel is column 6, lines 33-47 of Hu stating “[i]n the present invention, each slice is reconstructed from data only over 2π radians, centered about the slice, to eliminate redundancy and avoid possible image artifacts.” Further, column 10, lines 34-37 states “[r]eferring to 6(c), at *slice plane* position Z_r , the reconstruction of the voxels required data be collected for approximately 2π of gantry rotation represented by rotation line 70.” Accordingly, while the Examiner asserts that this portion of the reference describes reconstructing each voxel, Applicants respectfully submit it is clear from reading this section of Hu in light of the disclosure of Hu as a whole, that this section merely indicates that data is collected over a 2π section to eliminate redundancy and avoid possible image artifacts.

In light of the above, Applicants respectfully submit that Hu fails to disclose, teach or suggest “reconstructing image voxels from the scanned examination object from the output data and reproducing attenuation coefficients of the respective voxel, *each image voxel being reconstructed separately* from projection data that include a projection angular range of at least 180°, and *an approximate weighting taking place for each voxel considered in order to normalize the projection data used relating to the voxel,*” as recited in independent claim 1.

² Office Action mailed May 22, 2006, page 2, lines 18-20.

Silver is directed towards a method and system for reconstructing commuted tomography images using redundant data that describes reconstructing a slice using a “virtual” fan angle. Accordingly, Applicants respectfully submit that Silver is also directed towards reconstructing a slice rather than reconstructing each voxel as recited in independent claim 1.

Therefore, Applicants respectfully submit that Silver fails to cure the deficiencies of Hu as described above with respect to independent claim 1.

In light of the above, Applicants respectfully submit that neither Hu nor Silver, either alone or in any proper combination, disclose teach or suggest “reconstructing image voxels from the scanned examination object from the output data and reproducing attenuation coefficients of the respective voxel, each image voxel being reconstructed separately from projection data that include a projection angular range of at least 180°, and an approximate weighting taking place for each voxel considered in order to normalize the projection data used relating to the voxel,” as recited in amended independent claim 1.

Therefore, Applicants respectfully request that the rejection of independent claim 1 under 35 U.S.C. §103(a) in view of Hu and Silver be withdrawn.

Further, Applicants respectfully note that independent claims 10 and 16 recite features similar to the features of independent claim 1 identified above that distinguish over the combination of Hu and Silver and thus, independent claims 10 and 16 and claims 2-4, 8 and 11-13 which depend from independent claim 1 are also allowable.

Therefore, Applicants respectfully request that the rejection of claims 1-4, 8, 10-13 and 16 under 35 U.S.C. §103 as unpatentable in view of Hu and Silver be withdrawn.

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hu and Silver and in further view of Gullberg et al. (IEEE Vol. 11, no. 1, June 1992, herein Gullberg).

Applicants respectfully submit that Gullberg fails to cure the deficiencies of Hu and Silver as described above with respect to independent claim 1 and thus, respectfully submit that dependent claim 9 is allowable over Hu, Silver and Gullberg for at least the same reasons that independent claim 1 is allowable over Hu and Silver.

Therefore, Applicants respectfully request that the rejection of claim 9 under 35 U.S.C. §103(a) in view of Hu, Silver and Gullberg be withdrawn.

Claims 5 and 6 stand rejected under U.S.C. §103(a) as unpatentable over Hu, Silver and Lai (U.S. Patent No. 6,118,841).

Applicants respectfully submit that Lai fails to cure the deficiencies of Hu and Silver as described above with respect to independent claim 1 and thus, respectfully submit that dependent claims 5 and 6 are allowable over Hu, Silver and Lai for at least the same reasons that independent claim 1 is allowable over Hu and Silver.

Therefore, Applicants respectfully request that the rejection of claims 5 and 6 under 35 U.S.C. §103(a) be withdrawn.

Claims 14 and 15 stand rejected under 35 U.S.C. §103(a) over Hu, Silver and Lai.

Applicants respectfully submit that Lai fails to cure the deficiencies of Hu and Silver as described above with respect to independent claim 1 and thus, respectfully submit that dependent claims 14-15 are allowable over Hu, Silver and Lai for at least the same reasons that independent claim 1 is allowable over Hu and Silver.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and allowance of each of pending claims of the present application is earnestly solicited.

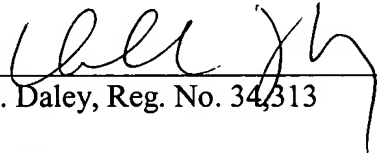
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By


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